

Angle Simulation Software

C M S

February, 2004

V e r 1 . 0

Preface:

This is the user manual for the CMS Angle Simulation Software Version 2.

This software simulates the output of a camera, lens and monitor setup. It can simulate different camera heights as well as subject distance placement and lens zooming.

The suggested computer specifications for this software are:

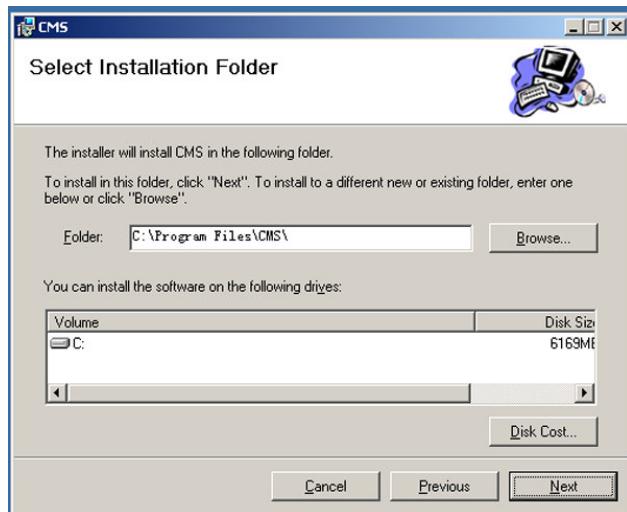
1. Pentium 3
2. Windows 2000
3. 256 MB random access memory
4. 16-bit color, 1024 X 768 monitor resolution
5. HDD size: 10 MB for the installed program and 8 MB for the installer.

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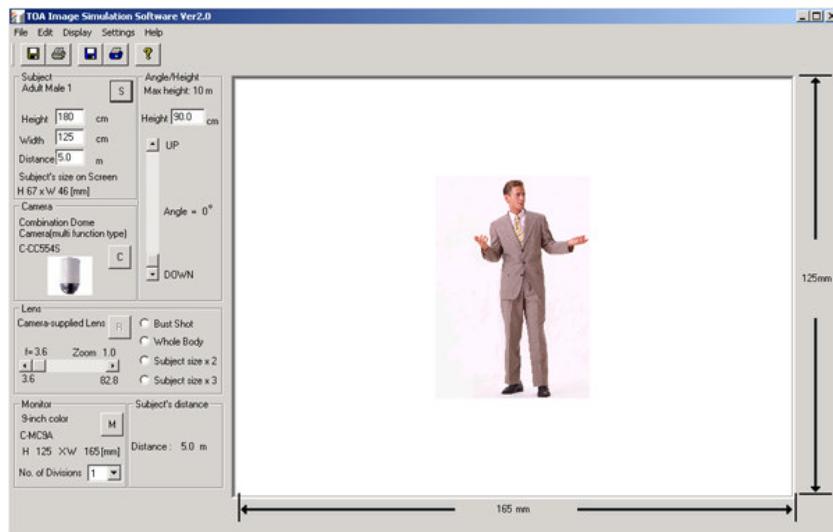
1. Software Installation

Running the installer will place the application, data files and Freeimage.dll into the directory that the user will specify during the installation. The default directory is C:\ProgramFiles\CMS\.



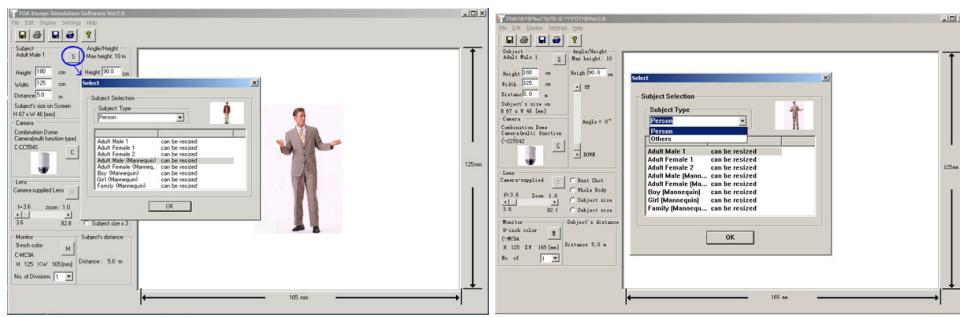
2. Running The Program

Running the program will display the splash screen that will show a camera used in this software. After the splash screen the main screen with the initial set of data will be loaded. The Subject, Camera, Lens, and Monitor buttons, zoom, and Camera Height scrollbars, and other functionalities are found on the left side of the main screen. The simulation output screen is found at the right side.



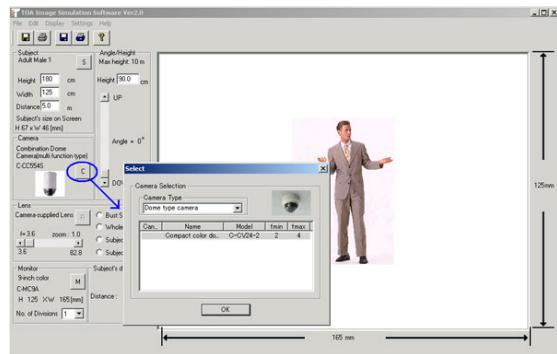
3. Subject Button –

Clicking this button will display the selection dialog box as shown on the pictures below. In the selection dialog box the user can select a particular subject type, such as Person and Others, and select a specific subject. The chosen subject is then displayed on the simulation output screen. The image may be in color or monochrome depending on the current camera and monitor. The data of the selected subject is shown on the main screen, such as the subject height, subject width and subject name. Also show in the main screen is the subject's dimensions on the chosen monitor. The also dimension depends on the chosen zoom level.



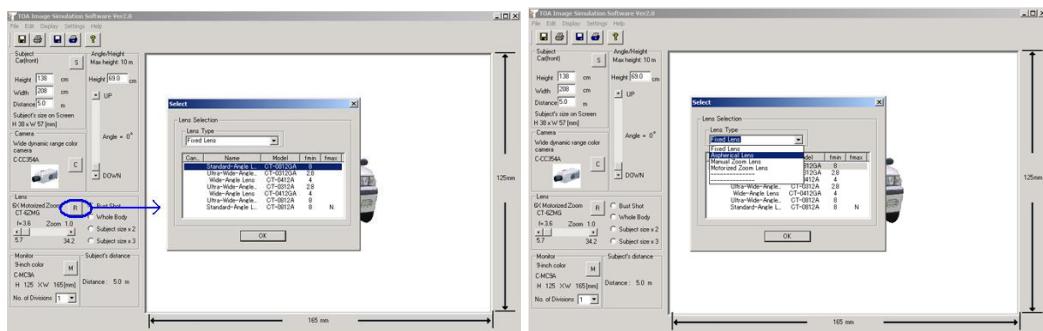
4. Camera Button –

Clicking the button will display a camera selection dialog box as shown on the pictures below. It will allow the user to choose a particular camera type and a specific camera to be used. The image of the chosen camera is then displayed in the main screen. Depending on the camera, the simulation output may be in color or monochrome. Data of the selected camera will be displayed on the main screen, such as camera name.



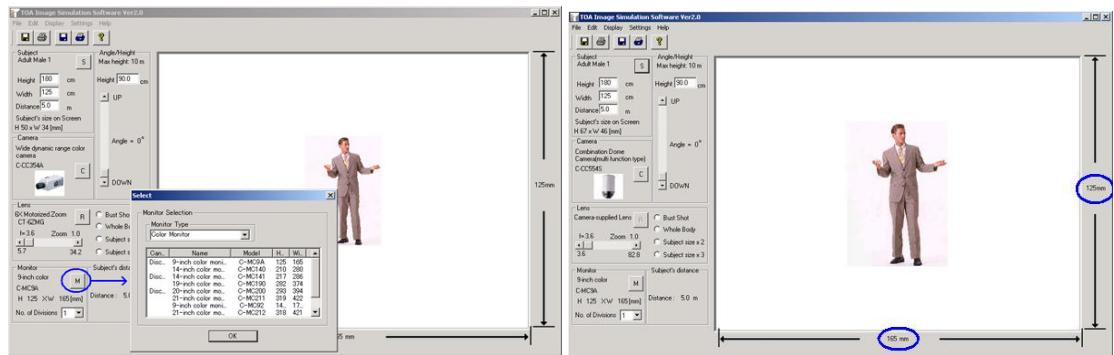
5. Lens Button-

By clicking this button a selection dialog box appears and this will allow the user to change the lens of a particular camera. On the initial screen the button is disabled and will only be enabled if the user chooses a camera that has a changeable lens. The picture below will show the selection dialog box for the lens. The data of the selected lens will be displayed on the main screen, such as lens name, and the minimum and maximum allowable zoom levels.



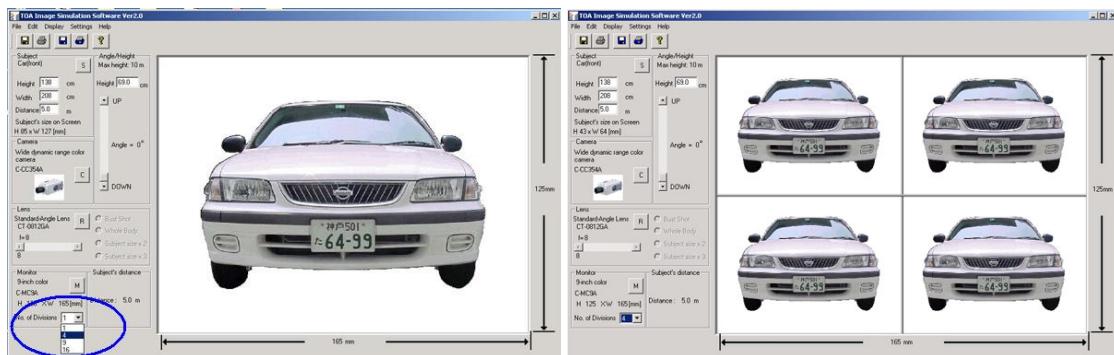
6. Monitor Button –

By clicking this button a selection dialog box appears and allows the user to choose a particular monitor type and a specific monitor to be used. The dimensions of the chosen monitor are shown on the right side and bottom part of the simulation output screen. The picture below will show the monitor selection box. Depending on the monitor, the simulation output may be in color or monochrome. The data of the chosen monitor will be displayed on the main screen, such as monitor name and monitor dimensions.



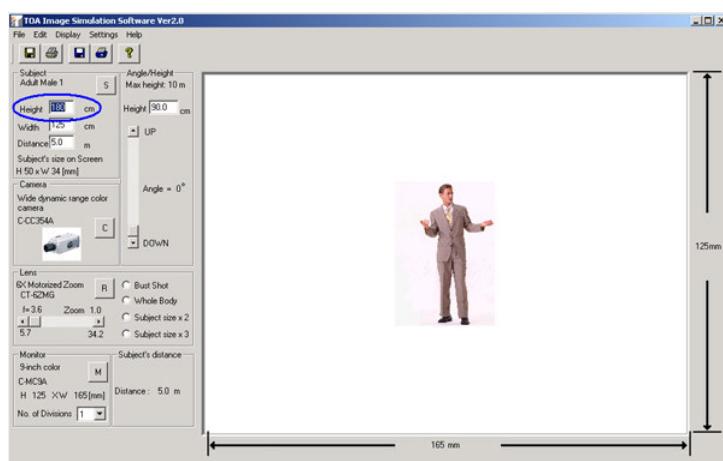
7. Monitor Divisions –

This feature will allow the user to split the screen to 4,9 or 16 divisions for a multiple viewing of the subject. The picture below will show this feature.



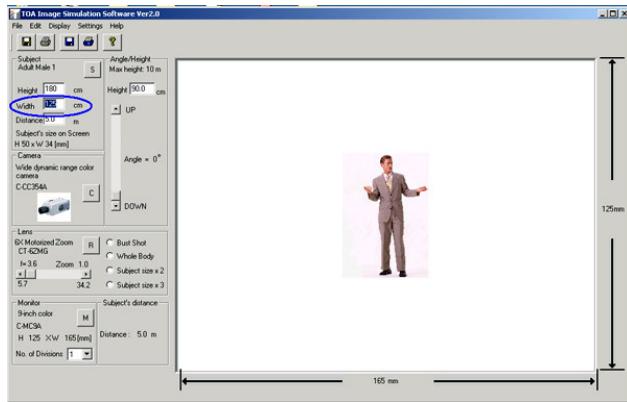
8. Subject Height –

This feature will allow the user to change the height of the subject. The range is from 1 cm to 1000 cm. The picture below indicates this feature.



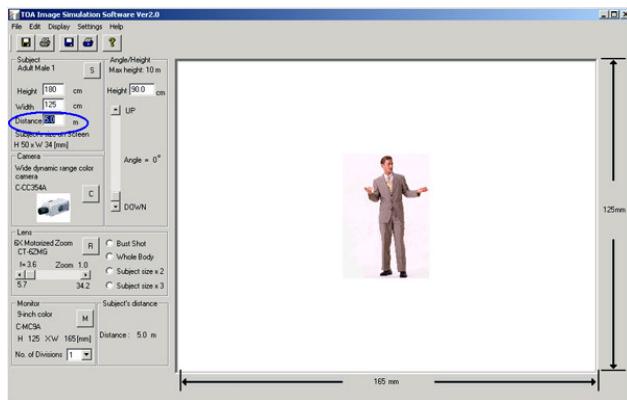
9. Subject Width –

This feature allows the user to change the width of the subject. The range is from 1 cm to 1000 cm. The picture below indicates this feature



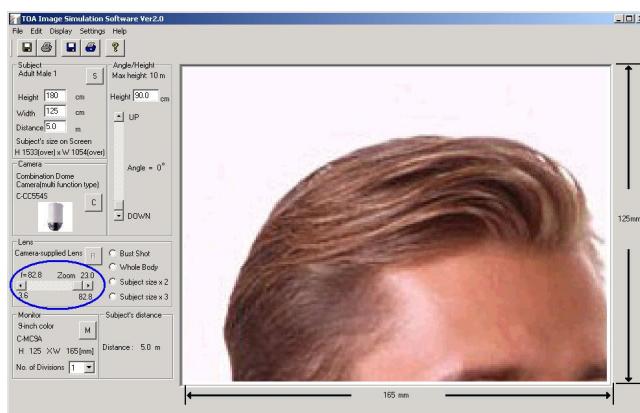
10. Subject Distance –

This feature allows the user to change the horizontal distance of the subject. The range is from 1.5 m to infinity (∞). The picture below shows this feature.



11. Zoom Scrollbar –

This feature allows the user to zoom in and zoom out the subject. If the user chooses either a camera or lens without zoom, this feature will be disabled. The picture below is a sample of this feature. The zoom level the user chooses is displayed on the upper right side of the zoom scrollbar.



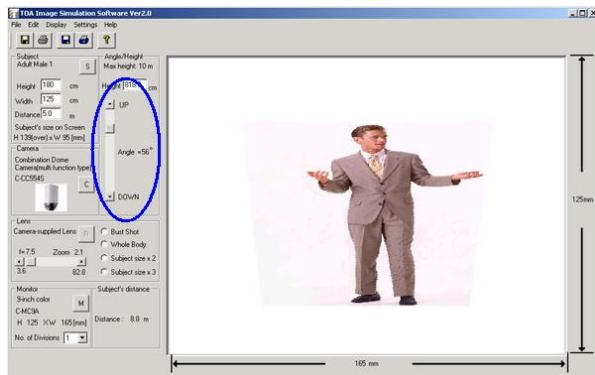
12. Camera Height –

This feature allows the user to change the camera height. The minimum range is half the height of the subject and the maximum is 1000 cm. Changing the camera height will result to a “tilted” image. The picture below is a sample of this feature.



13. Camera Height Scrollbar –

This feature will allow the user raise or lower the camera. The camera is always pointed to the subject and will result to a “tilted” image. The angle of the camera is also displayed and can range from 0 degrees to the maximum which depends on the height of the subject and the distance of the subject to the camera. The picture below is a sample of this feature.



14. Bust Shot

Radio Button- This feature will allow the user to view the upper half of the subject. The picture below is a sample of this feature.



15. Whole Body-

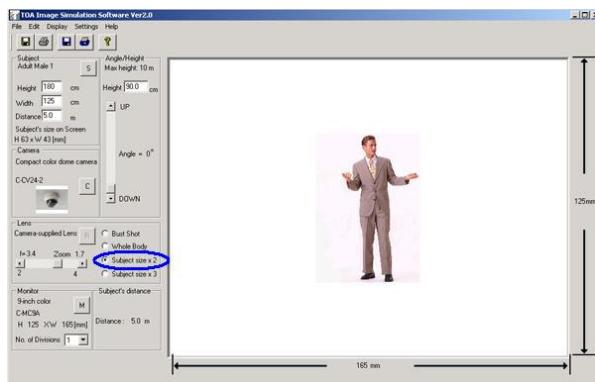
The zoom level is set such that the subject will fill the height of the simulation output screen. The picture below is a sample of this feature.



16. Subject Size X 2 –

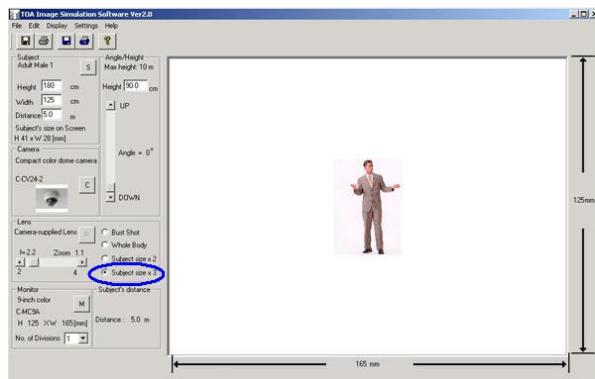
The height of the subject will be half of the simulation output screen's height.

If the desired zoom level is not possible, it will be reset to the next possible value. The picture below is a sample of this feature.



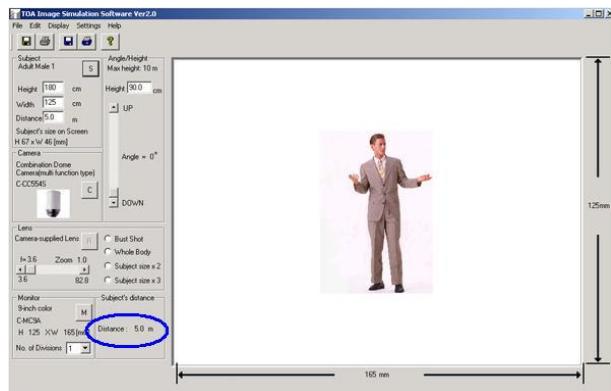
17. Subject Size X 3 –

The height of the subject will be one third of the simulation output screen's height. If the desired zoom level is not possible, it will be reset to the next possible value. The picture below is a sample of this feature.



18. Subject to Camera Distance –

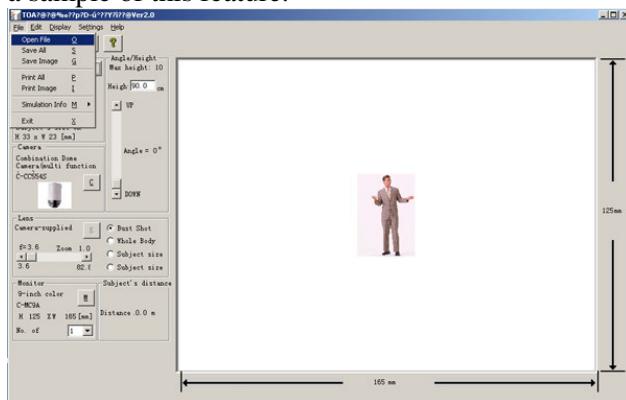
The value found in this item is the actual distance from the center of the subject to the lens of the camera. The value of this item is different from the subject distance mentioned above. Their values will be equal if the camera angle is at 0 degrees.



19. File Menu

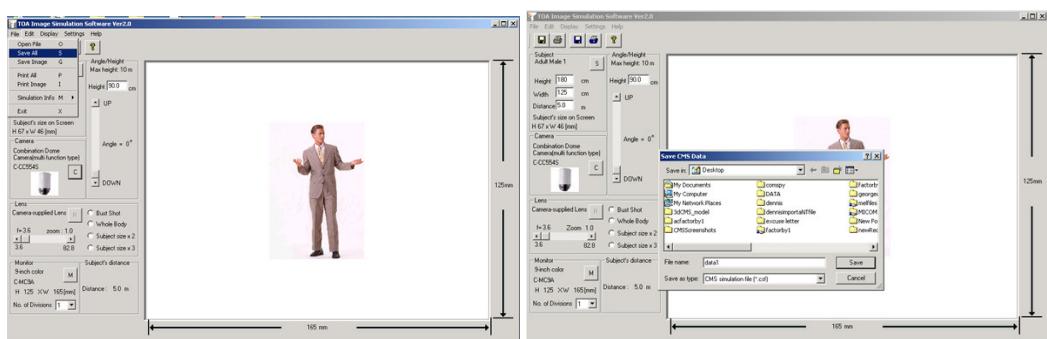
19.a Open File –

This feature will allow the user to open a saved simulation. The picture below is a sample of this feature.



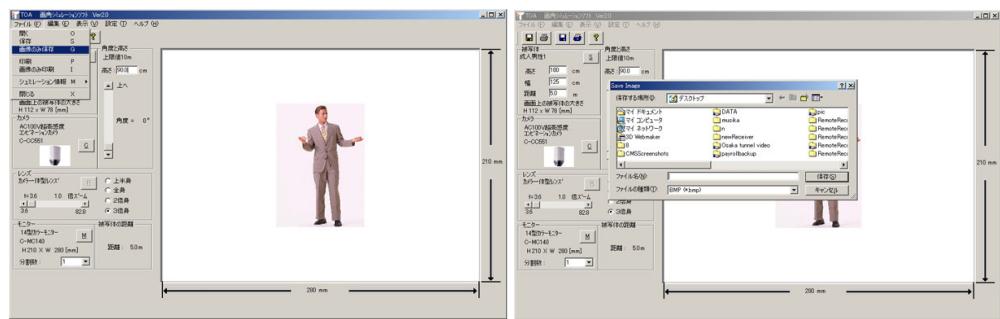
19.b Save All –

This feature will allow the user to save the simulation with an extension name of (*.csf) and can be loaded using the Menu Open File option. The picture below is a sample of this feature.



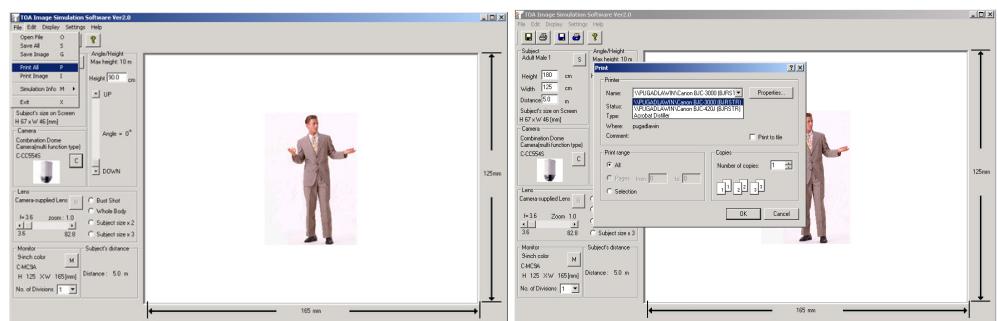
19.c Save Image -

This feature will allow the user to save the image loaded in the simulation output screen. The image can be saved into a *.bmp or *.jpg format. The picture below is a sample of this feature.

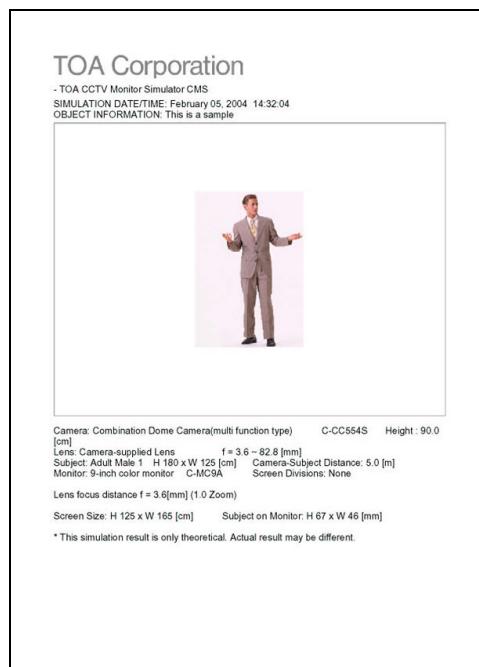


19.d Print All -

This menu option will print the simulation data and the image. The picture below is a sample of this feature.

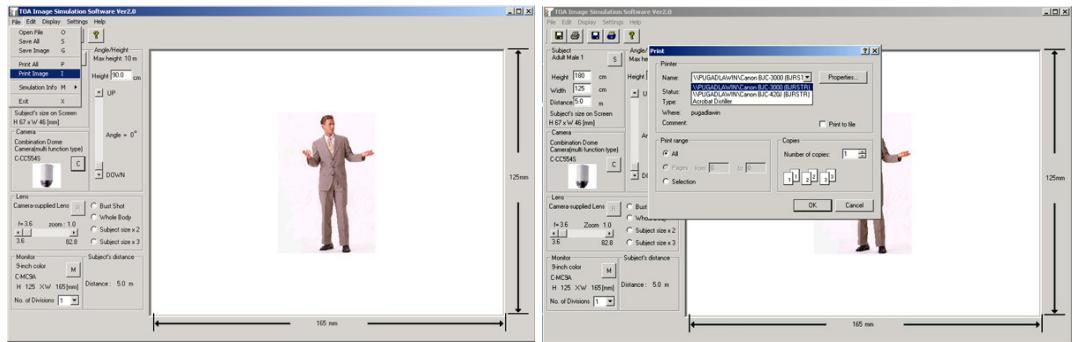


The picture below is a sample of this menu option.



19.e Print Image –

This menu option will print the image loaded on the simulation output screen. The picture below is a sample of this feature.

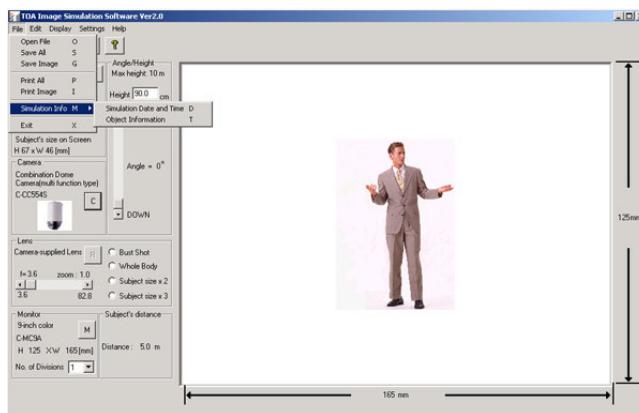


The picture below is a sample output of this menu option.



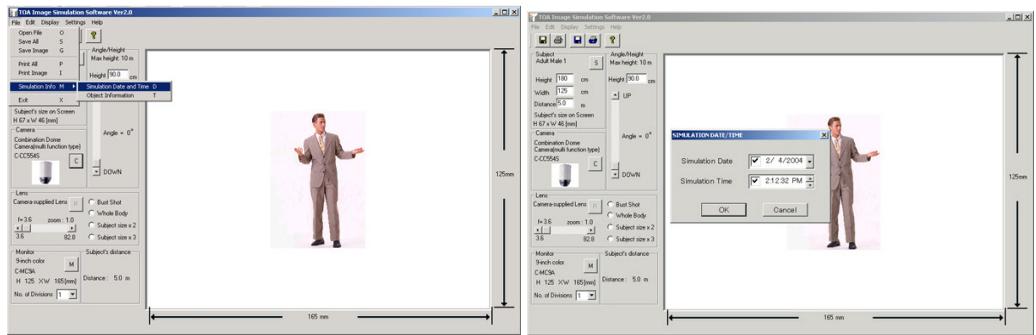
19.f Simulation Information –

This menu option allows the user to add information to the data such as Simulation Date and Time and Object information.



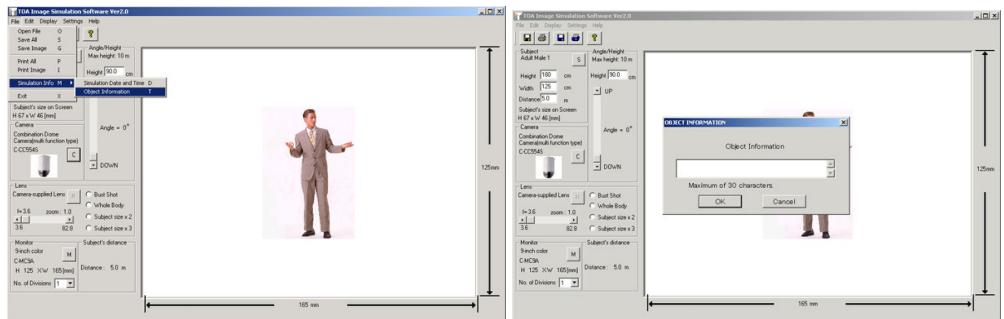
i. Simulation Date and Time –

This menu option will allow the user to put a simulation date on the simulation data. The samples of this feature are shown below.



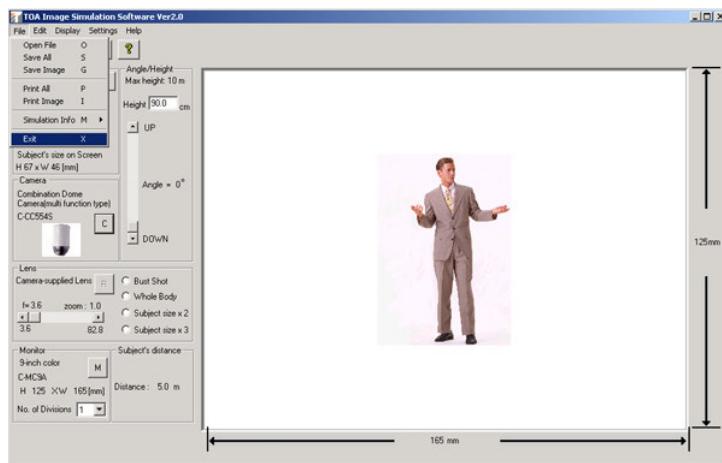
ii. Object Information –

This menu option will allow the user to add additional object information on the simulation data up to 30 characters long. The samples of this feature are shown below.



19.g Exit –

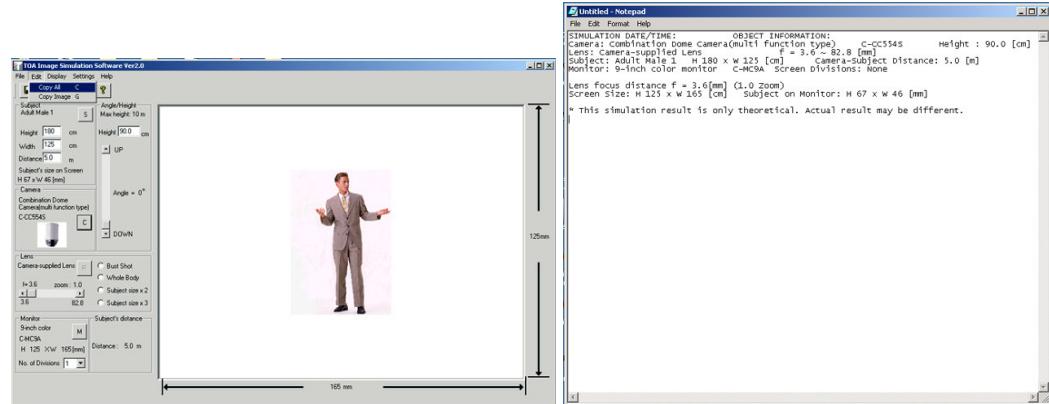
This menu option will exit the program.



20. Edit Menu

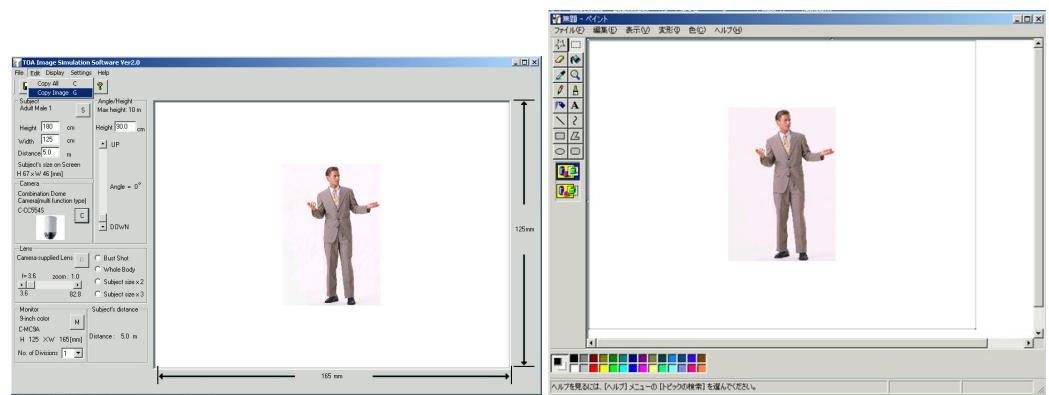
20.a Copy All –

This menu option will copy the simulation data to the clipboard. The samples of this feature are shown below.



20.b Copy Image –

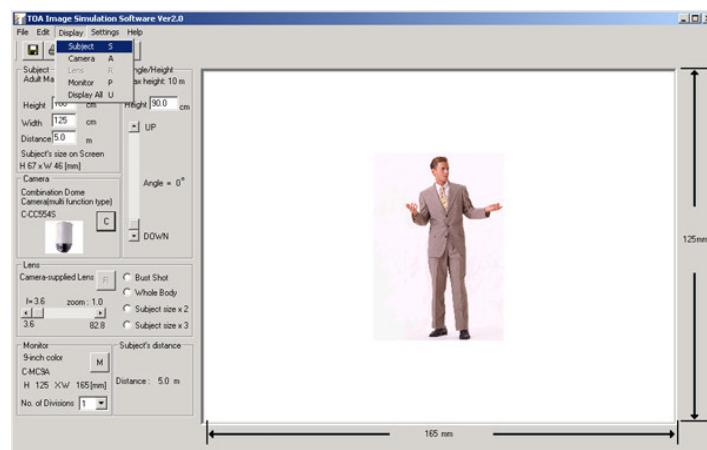
This menu option will copy the image loaded from the simulation output screen to the clipboard. The samples of this feature are shown below.



21. Display Menu

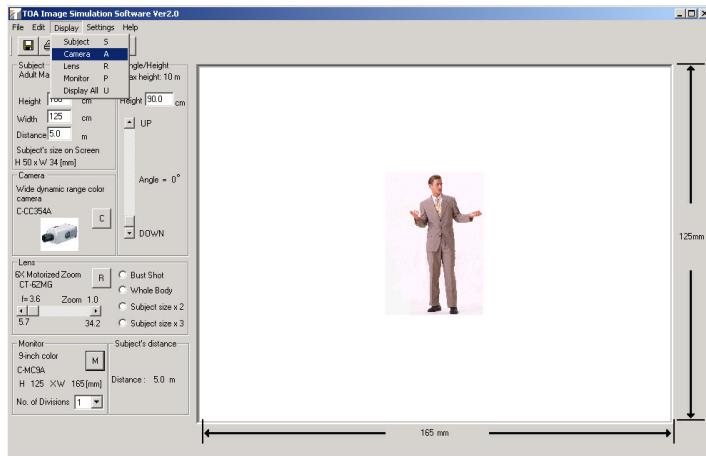
21.a Subject –

This menu option does the same function as the Subject button mentioned previously in this manual. The sample of this feature is shown below.



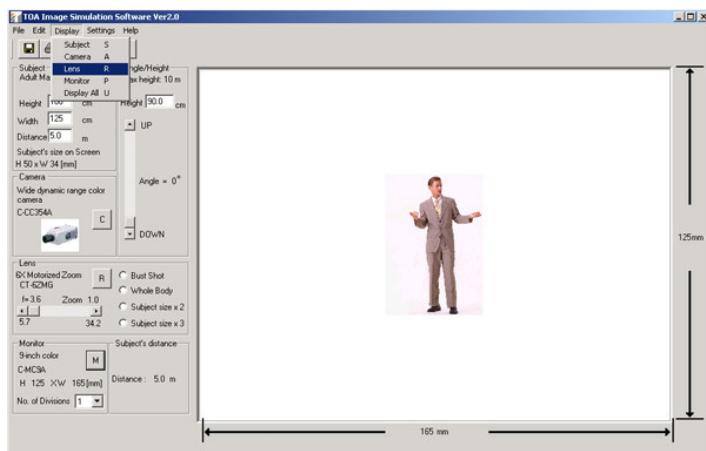
21.b Camera –

This menu option does the same function as the Camera button mentioned previously in this manual. The sample of this feature is shown below.



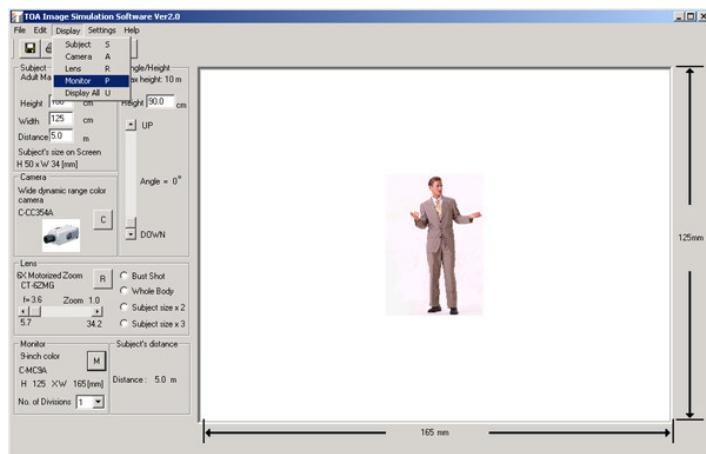
21.c Lens –

This menu option does the same function as the Lens button mentioned previously in this manual. The sample of this feature is shown below.



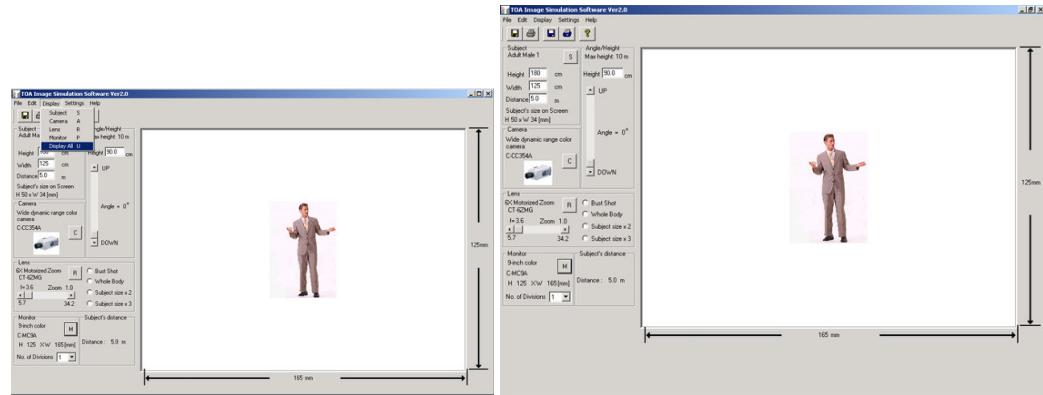
21.d Monitor –

This function does the same function as the Monitor button mentioned previously in this manual. The sample of this feature is shown below.



21.e Display All –

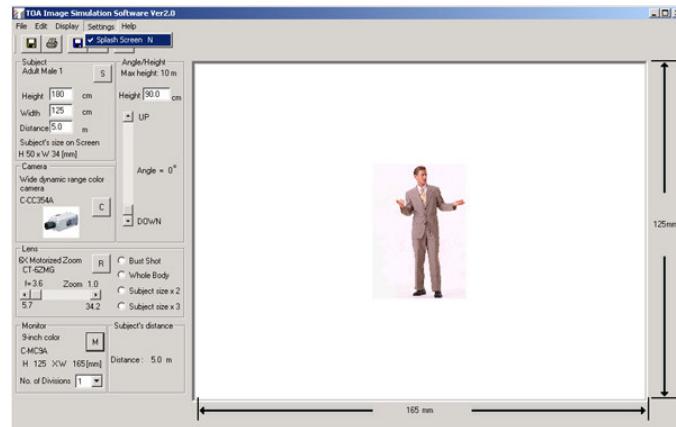
This menu option will maximize the main dialog box. The samples of this feature are shown below.



22. Settings Menu

21.a Splash Screen –

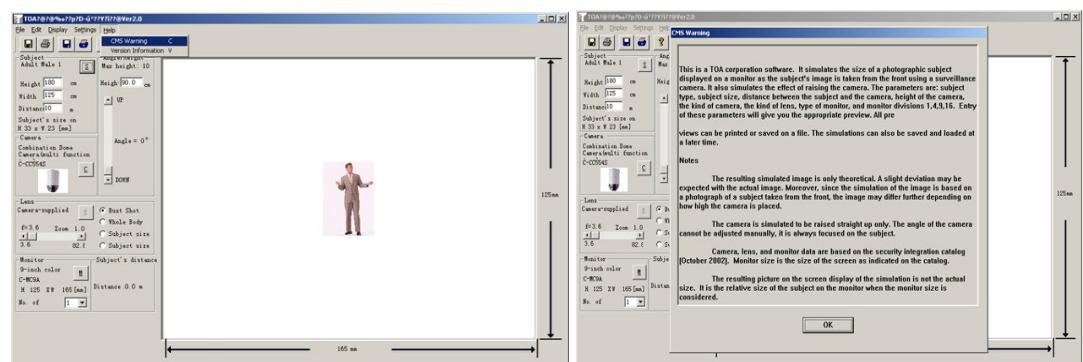
This menu option will allow the user to toggle the display of the splash screen.



23. Help Menu

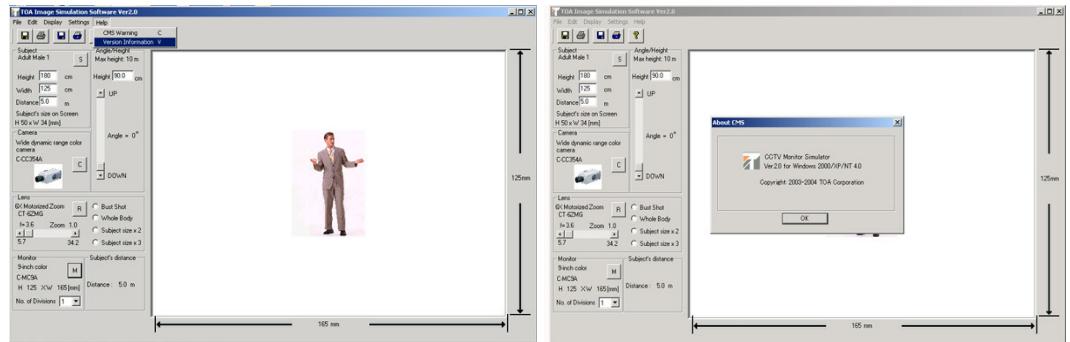
23.a CMS Warning –

This menu option will display the warning dialog box. The samples of this feature are shown below.



23.b Version Information –

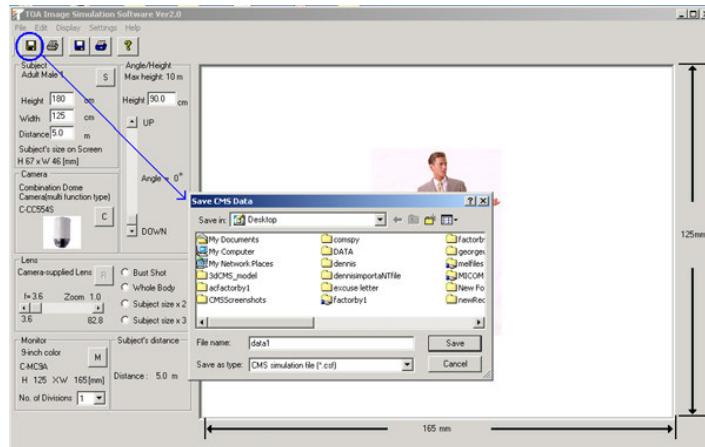
This menu option will display a dialog box that contains the version information about the software



24. Toolbar

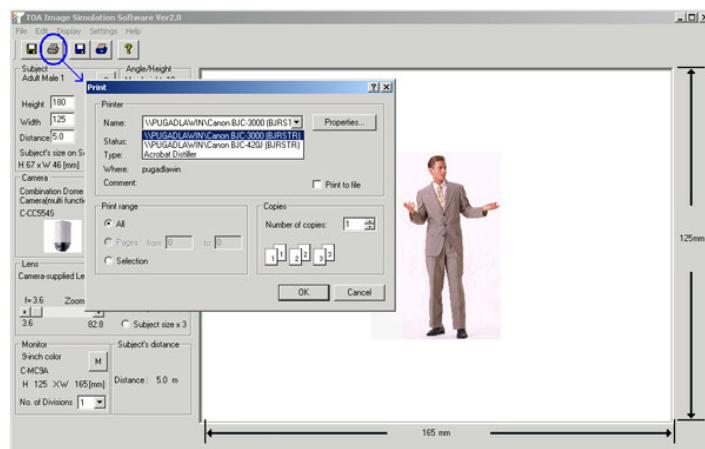
24.a Save All –

This toolbar icon does the same function as the Save All menu option that was previously mentioned in this manual. The sample of this feature is shown below.



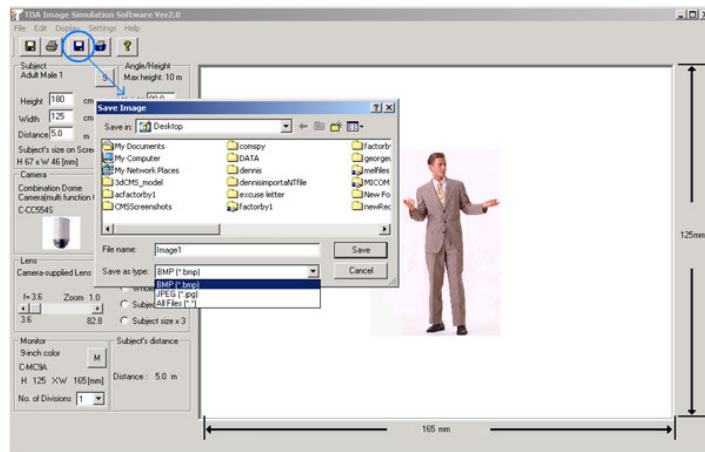
24.b Print All –

This toolbar icon does the same function as the Print All menu option that was previously mentioned in this manual. The sample of this feature is shown below.



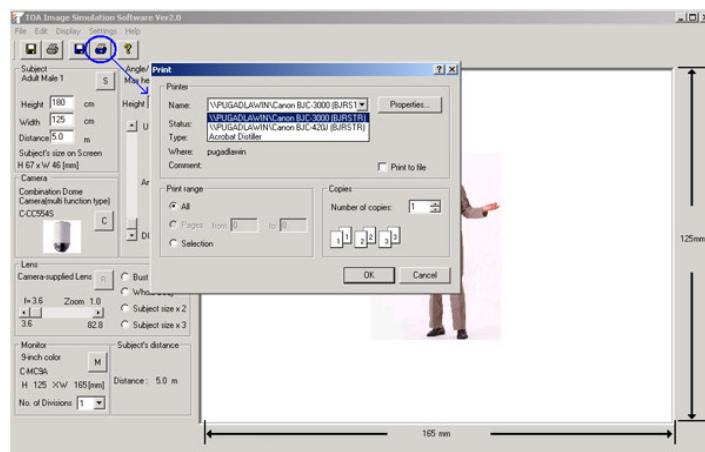
24.c Save Image -

This toolbar icon does the same function as the Save Image menu option that was previously mentioned in this manual. The sample of this feature is shown below.



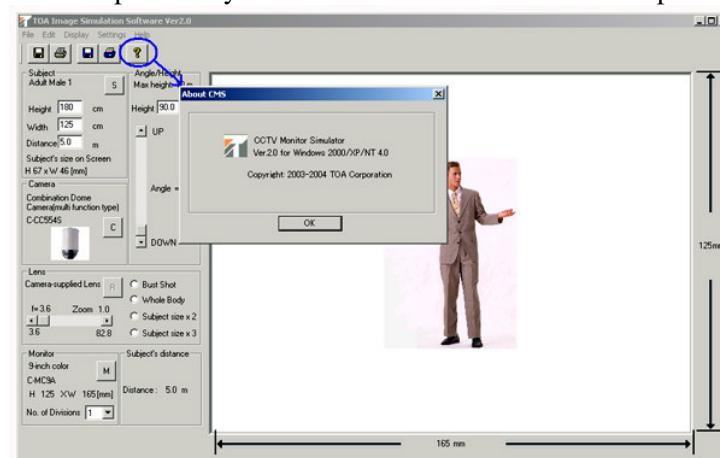
24.d Print Image -

This toolbar icon does the same function as the Print Image menu option that was previously mentioned in this manual. The sample of this feature is shown below.



24.e Version Information -

This toolbar icon does the same function as the Version Information menu option that was previously mentioned in this manual. The sample of this feature is shown below.



25. The Data Files

This document describes the contents of the listings of the different components used by the CMS program. Each of these files are tab-delimited text files with ten columns per line. Below is the description of the files. Only the existing kinds of monitors, cameras, lenses, and subjects are acceptable values for the data files.

9000.cmf

Each line describes a particular monitor.

- 1 discon
values accepted: Y or N
This indicates whether production of the monitor has been discontinued (Y) or currently in production (N)
- 2 kind
values accepted: 0 or 1
This indicates whether the monitor is colored (0) or monochrome (1)
- 3 name
This is the name of the monitor
- 4 model number
This is the model number of the monitor
- 5 height
This is the height of the display of the monitor in millimeters
- 6 width
This is the width of the display of the monitor in millimeters.
- 7-10 value accepted: NULL
These columns currently don't hold data. Other values aside from NULL should not be used for these columns.

9010.ccf

Each line describes a camera.

- 1 discon
values accepted: Y or N
This indicates whether production of the camera has been discontinued (Y) or currently in production (N)
- 2 kind
values accepted: 0, 1, 2, 3, 4, 5
This indicates whether the camera is a combination camera (0), dome type camera (1), one-cable color camera (2), color camera (3), one-cable B/W camera (4), B/W CCD camera (5)
- 3 name
This is the name of the camera.
- 4 model number
This is the model number of the camera
- 5 fmin
This is the minimum focal length of the lens in case there is a built-in lens in the camera. A value of NULL is used if the lens can be changeable.
- 6 fmax
This is the maximum focal length of the built-in lens. If the lens does not have zoom or if the lens is changeable, a NULL value is placed.
- 7 file location

This is the filename of an image of the camera. The filename should be only four characters long and have the file extension of dat. For example: 1000.dat

8 ccd type

values accepted : Y or N

This indicates the CCD used in the camera. A value of (Y) is used for a 1/3 CCD while a value of (N) is for the 1/4 CCD.

9-10 value accepted: NULL

These columns currently don't hold data. Other values aside from NULL should not be used for these columns.

9020.crf

Each line describes a lens.

1 discon

values accepted: Y or N

This indicates whether production of the lens has been discontinued (Y) or currently in production (N)

2 kind

values accepted: 0, 1, 2, 3, 4, 5

Lens types are: fixed lens(0), aspherical lens (1), manual zoom lens (2), auto zoom lens (3), pinhole lens (4), prism lens (5)

3 name

This is the name of the lens.

4 model number

This is the lens model number

5 fmin

This is the minimum focal length of the lens.

6 fmax

This is the maximum focal length of the lens. If the lens cannot zoom, the value will be NULL.

7-10 value accepted: NULL

These columns currently don't hold data. Other values aside from NULL should not be used for these columns.

9030 cpf

Each line describes a subject.

1 sizing

accepted values: Y or N

This was used to indicate if the image dimension proportions are to be kept (Y) or not (N). Right now, the program allows all images to be freely resizable.

2 kind

accepted values: 0, 1

This indicates whether the subject is a person (0) or another kind of subject (1).

3 name

This is the name of the subject.

4 NULL

This column is not used and the value should be set at NULL.

5 height

This is the height of the subject in centimeters.

6 width

This is the width of the subject in centimeters.

7 color file location

This is the filename of the colored image of the subject. The filename should be only four characters long and have the file extension of dat. For example: 0040.dat

8 B/W file location

This is the filename of the monochrome image of the subject. The filename should be only four characters long and have the file extension of dat. For example: 0041.dat

9-10 value accepted: NULL

These columns currently don't hold data. Other values aside from NULL should not be used for these columns.

All data files, including the image files, are to be placed in the "DATA" folder that can be found in the folder where the program was installed.